

transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, the plurality of interface modules including first and second interface modules and a plurality of additional interface modules distributed throughout the vehicles, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and to the plurality of output devices by way of respective dedicated communication links, the plurality of interface modules cooperating to control the plurality of output devices based on input status information from the plurality of input devices;

(B) a chassis; and

(C) a variant module, the variant module being mounted on the chassis and the weight of the variant module being supported by the chassis, the variant module having at least one of the plurality of interface modules mounted thereon, the variant module including a mechanical drive device capable of imparting motion to solid or liquid matter that is not part of the vehicle to provide the vehicle with a first type of functionality, the variant module being removable and replaceable with other variant modules having other mechanical drive devices.

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A control method for an equipment service vehicle having a plurality of input devices, a plurality of output devices, and a plurality of interface microprocessor-based modules, the plurality of interface modules including first and second interface modules and a plurality of additional interface modules distributed throughout the vehicle, the plurality of interface modules being connected to each other by way of a communication network, and the plurality of interface modules being connected to respective ones of the plurality of input and output devices, the method comprising:

(A) storing I/O status information at each respective one of the plurality of interface modules, including (1) storing I/O status information acquired locally by the respective interface module from a subset of the plurality of input devices, the subset of the plurality of input devices being connected to the respective interface module, and (2) storing I/O status information received by way of the communication network from remaining ones of the plurality of interface modules;

(B) processing the I/O status information at each respective one of the plurality of interface modules to determine desired output states for a subset of the plurality of output devices, the subset of the plurality of output devices being connected to the respective interface module; and

(C) controlling the plurality of output devices in accordance with the desired output states using the plurality of interface modules; and

wherein each of the plurality of interface modules stores I/O status information for substantially all of the plurality of input devices and substantially all of the plurality of output devices, including the input devices and output devices that are connected to other interface modules.

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A method according to claim 37, wherein substantially all of the desired output states are determined entirely locally at the respective interface modules to which the output devices are connected based on the I/O status information acquired locally and/or based on the I/O status information received by way of the communication network.

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A method according to claim 37, wherein the I/O status information stored in each of the plurality of interface modules, including the I/O status information received from the remaining ones of the plurality of interface modules, is dynamically updated in real-time.

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A control method for an equipment service vehicle having a plurality of input devices, a plurality of output devices, and a plurality of interface microprocessor-based modules, the plurality of interface modules including first and second interface modules and a plurality of additional interface modules distributed throughout the vehicle, the plurality of interface modules being connected to each other by way of a communication network, and the plurality of interface modules being connected to respective ones of the plurality of input and output devices and being, the method comprising:

(A) storing I/O status information at each respective one of the plurality of interface modules, including (1) storing I/O status information acquired locally by the respective interface module from a subset of the plurality of input devices, the subset of the plurality of input devices being connected to the respective interface module, and (2) storing I/O status information received by way of the communication network from at least some remaining ones of the plurality of interface modules;

(B) processing the I/O status information at each respective one of the plurality of interface modules to determine desired output states for a subset of the plurality of output devices, the subset of the plurality of output devices being connected to the respective interface module; and

(C) controlling the plurality of output devices in accordance with the desired output states using the plurality of interface modules; and

wherein substantially all of the desired output states are determined entirely locally at the respective interface module to which the output devices are connected based on the I/O status information acquired locally and/or based on the I/O status information received by way of the communication network.

B' *Panel*